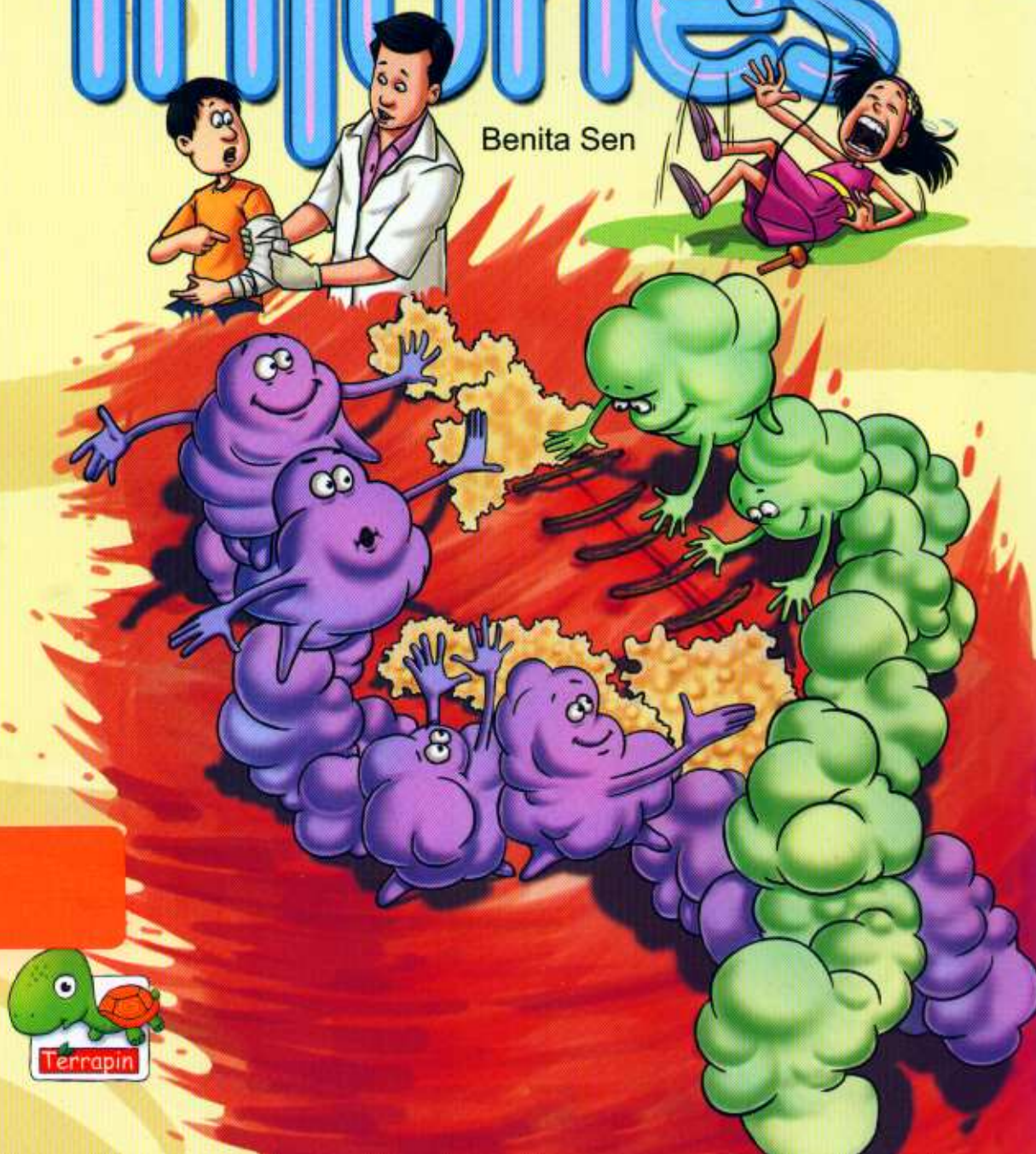


Get Well Soon

Injuries

Benita Sen



A note by Dr R K Pachauri

Human beings have made great progress in recent years. We have been able to produce a large number of goods and services on a huge scale, and have utilized technology in a wide range of activities. However, all this has come at an increasing cost which has often remained concealed or ignored. Our bodies of water have been polluted. The air around us has a large amount of particulate matter and gases that are not only harmful for our health but also affect the climate of the earth. Overall, we have neglected to take care of planet earth which is home to all of us and all other living species.

Economic development is meant to ensure a higher level of human welfare in this generation as well as for others yet to come. But we know from everything we see around us that water borne and air pollution related diseases are increasing. We can conclude that while we try to give our children a better life, we also harm their health in actual fact.

This series takes a look at some of the common ailments children suffer from, such as stomach problems, allergies, injuries, and fever. While these are all part of growing up, they are becoming a cause of concern, to both parents and their children, primarily because pollution has aggravated these maladies. The books not only focus on the science behind the causes of these ailments; they also point out ways to avoid them. Above all, the objective is to take the scary element out of these common maladies and ensure that the growing-up years are full of fun. Those who read these books would learn how to lead healthy and happy lives.



R K Pachauri

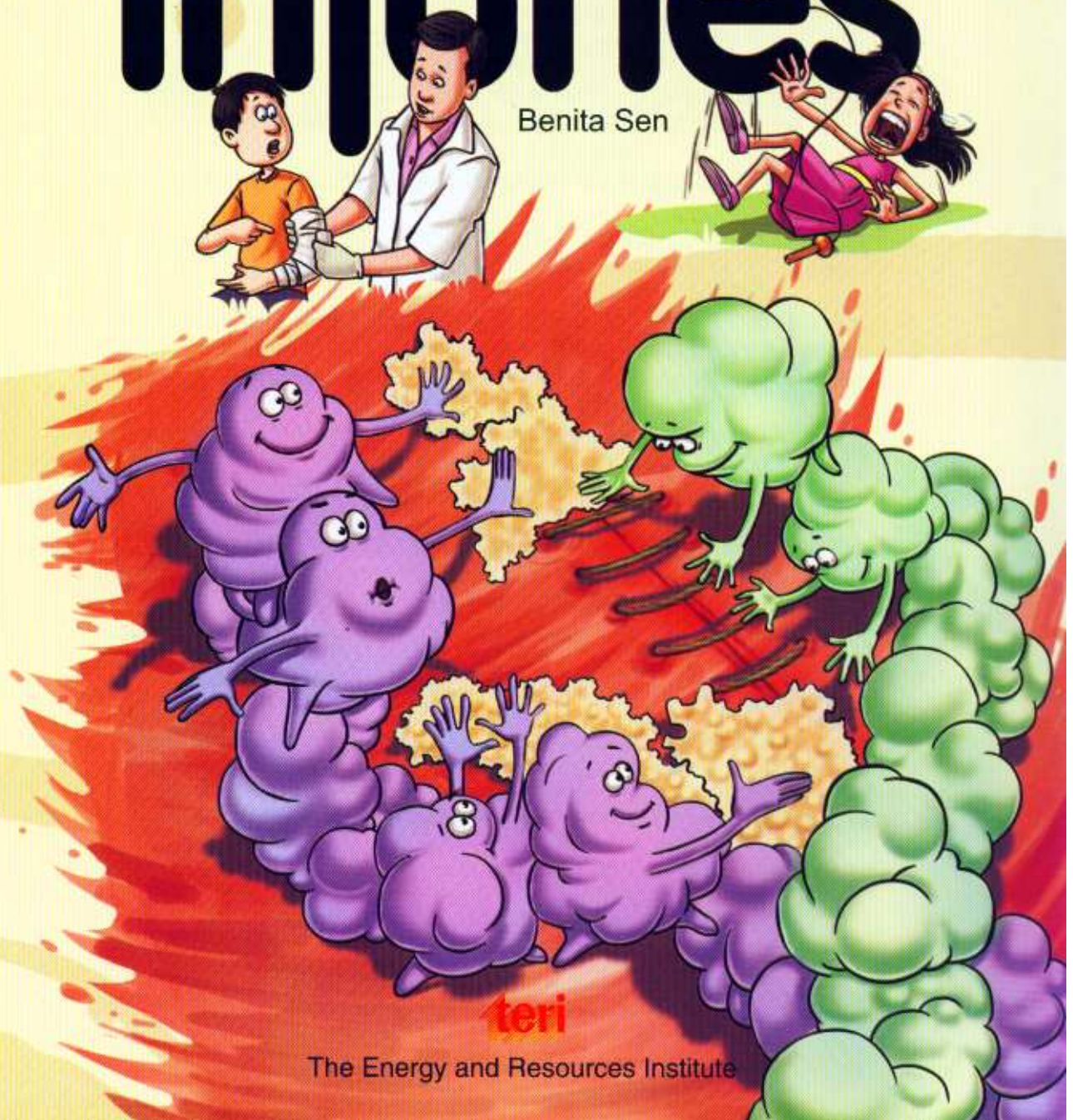
Director-General, TERI

Chairman, Intergovernmental Panel on Climate Change

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teri

The Energy and Resources Institute



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Disclaimer: This book has been reviewed by a medical practitioner and is meant for general educational purposes only. It should not be considered as a substitute for medical advice. The information provided in this book should not be relied upon to make decisions about a child's health. The family doctor should always be consulted about individual condition(s) and/or circumstances.

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ALL FALL DOWN!

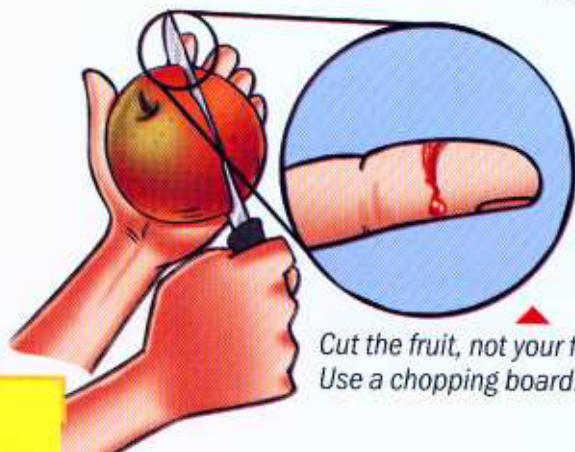


A skip, a jump, and a...ouch! That was a nasty fall! As the tears start rolling down your cheeks, the first thing you should do is take a look at where you have hurt yourself.

It could be a scratch or your skin could be grazed, which means it could be slightly broken. Doctors call this an abrasion. Sometimes, the skin changes colour even if it's not broken. That is a bruise.

At times, you can cut yourself and the wound starts bleeding.

Do not see anything much? Then, the injury could be under the skin. The pain you feel could be your bone crying out or it could be the muscle. Sometimes, it could be the tissue, that holds the bones



Cut the fruit, not your finger!
Use a chopping board.

together, that is in pain. Doctors call such a tissue, ligament.

Whatever it is, it hurts a lot, does it not?

But, have you ever wondered why you fell?

When we walk or run, we stand straight, although a strong force from inside the Earth is trying to pull us down. This force is called gravity. Sometimes while running, playing, or skipping rope, we lose our control. That is when the force of gravity wins, and we fall down.

WOUND WISE

It is not easy balancing yourself upright. That is why, babies find it easier to crawl before they can stand or walk. Our balance is best when we are in our teens.

SORE NO MORE

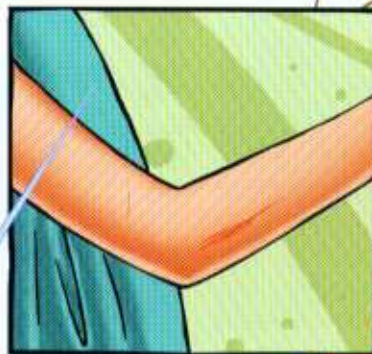
I want to walk tall,
I want to run strong.
I want to run safe
And take the wind along!

When your skin is rubbed away, you get an abrasion.

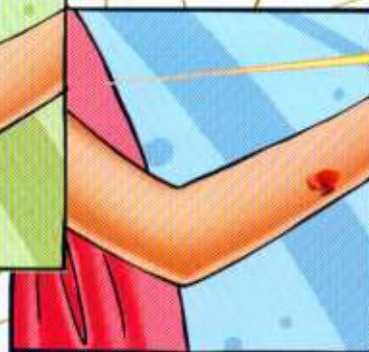


SCRATCHES, SCRAPES, AND CUTS

This doesn't look that bad!

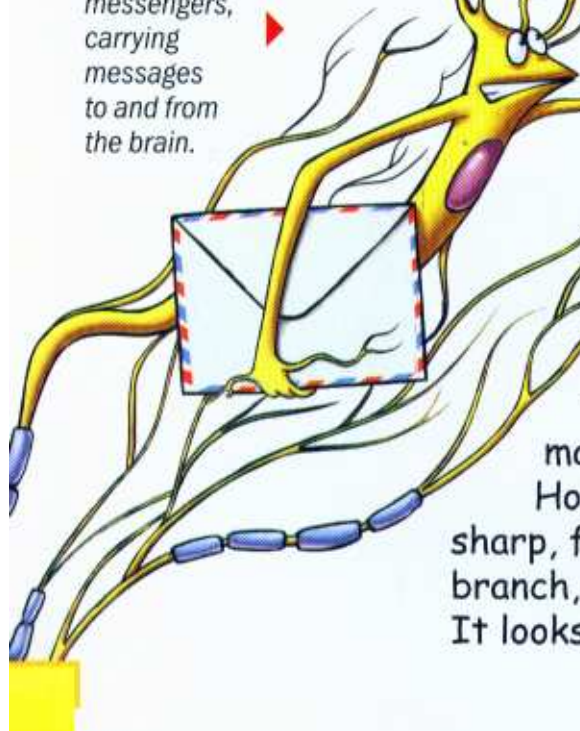


This doesn't look good at all!



Bwaaaaahh!
I am bleeding!

Nerves are like messengers, carrying messages to and from the brain.



Not every fall means bad news. Most of the time, the injury is not too serious, and it will hurt only for a while. All you need to do is rub your hand over the place where it hurts, and like magic, the pain will soon be gone! However, when you fall on something sharp, for example, the edges of a dead branch, a scratch can show up on your skin. It looks like a straight white mark similar to

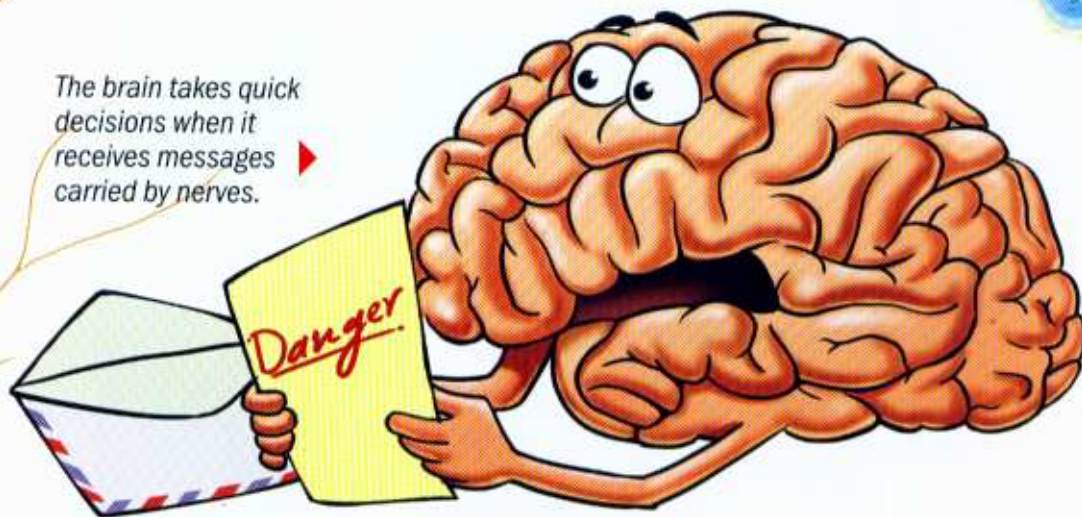


SORE NO MORE

Now I know better, and I'm not afraid of pain.
Because it tells me to be careful, so that I don't get hurt again.



The brain takes quick decisions when it receives messages carried by nerves. ▶



WOUND WISE

Inside your body lie millions of nerves that look like threads. They send and receive messages to and from the brain. When you fall, the nerves send a 'Danger!' message to the brain. The brain tells you to be careful, by making you feel the pain.

If you don't feel the pain, you might hurt yourself more without realizing.

the one your nail leaves on your skin when it is dry.

But if you fall and drag yourself a little, the skin where you have hurt yourself can come off. When a wound just scrapes off the top layer of skin, it is called an abrasion. It does not bleed much. A minor abrasion is called a graze, or a scrape.

If you fall on a sharp stone chip or a piece of glass, it can pierce your skin and leave behind a bleeding cut.



AN INSIDE VIEW



It hurts
a lot,
doctor.

The pain
tells you that
your skin has
been cut.

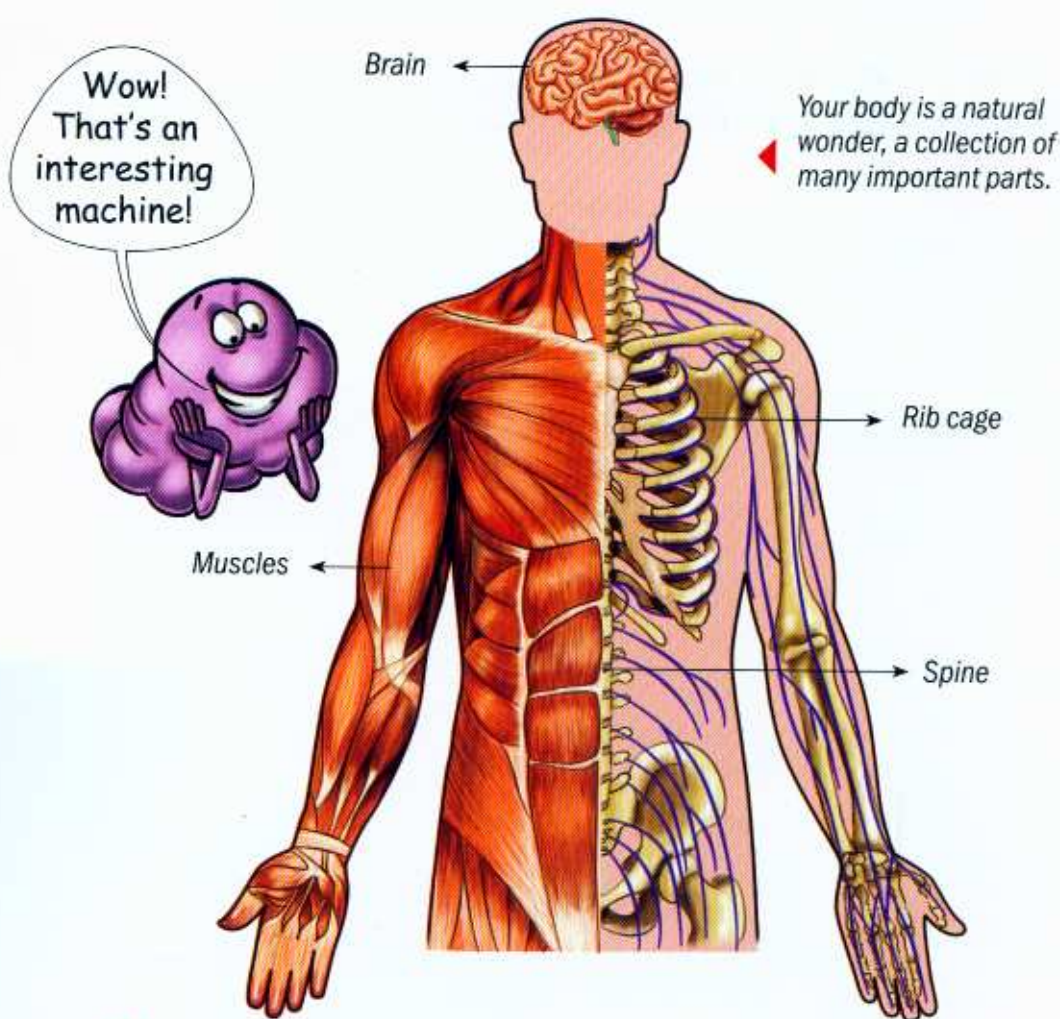
If it didn't
hurt, this glass
would still be
inside you!



Inside the body lie a number of important organs. These include the brain, heart, and stomach. All of these need to be held safely in place. This job is done by the skin, muscles, and skeleton, especially the ribs (the cage of bones under your chest). The skin protects the flesh below it and the blood flowing through our body from getting infected by germs. These germs float in the air and lie in wait on anything we touch. If they come in

WOUND WISE

Did you know that applying honey on wounds can speed up healing? It protects the skin from infections. Honey also prevents scar formation.



SORE NO MORE

My skin needs to stay intact, to keep my insides fine.
I need to save myself from falls, so my bones can stay in line.



contact with our blood or the flesh under the skin, they can make us ill.

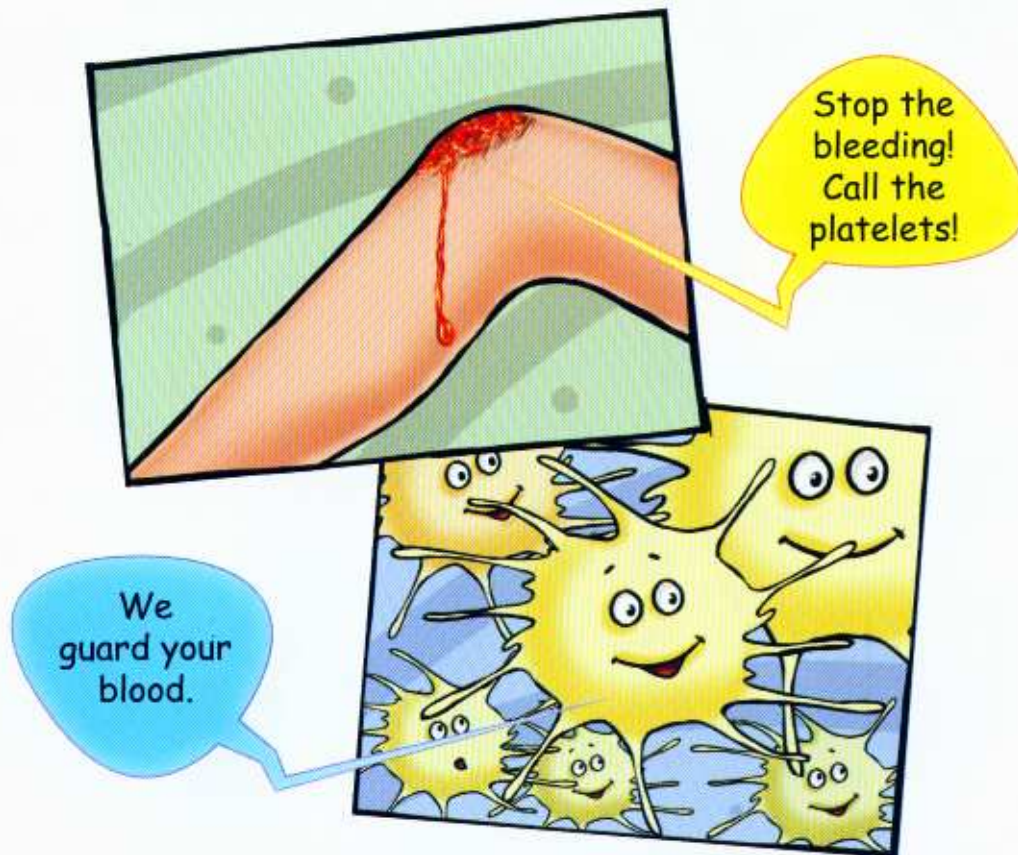
Pipes called veins and arteries carry blood to and from all parts of the body. If any of these pipes is broken, the body is in danger. Blood begins to flow out, instead of flowing inside the body.

One broken bone in your spine, arms, or legs means you cannot move as easily as before. And if you break a rib, you will find it extremely painful to breathe.





THE GUARDS OF BLOOD



A deep, large cut will bleed for a long time. The good news is that most of the time, cuts and wounds are not that serious. So, very soon you will find the blood beginning to thicken around the wound. This is called clotting, which stops the bleeding. However, you will need to take care that the clot is not disturbed. Otherwise, blood will start flowing out again.

Our body has many doctors, such as platelets. They are tiny

WOUND WISE

Haemophilia is a disease, in which the blood does not clot as it usually does. Those who suffer from haemophilia bleed a lot, even from a small cut.

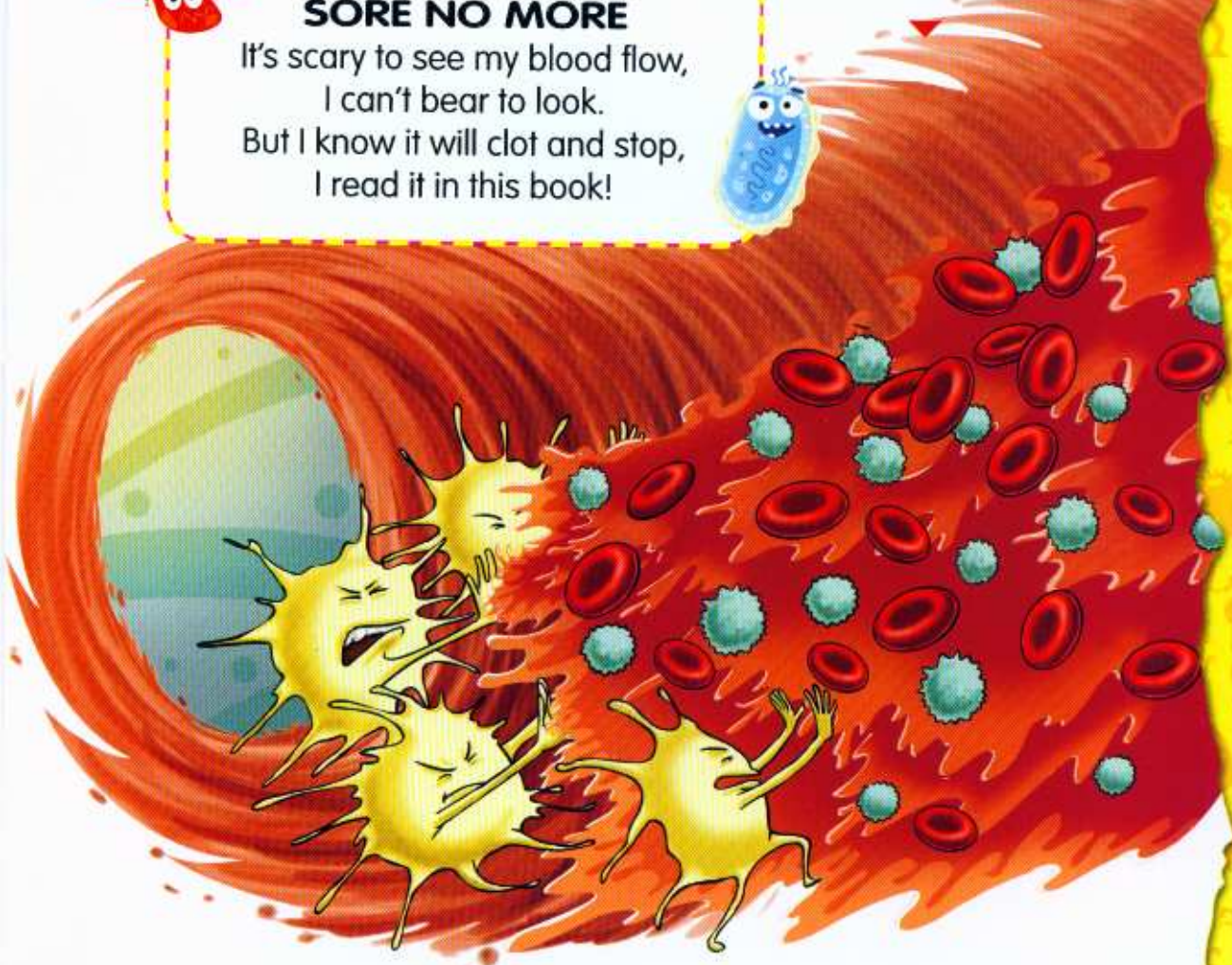


SORE NO MORE

It's scary to see my blood flow,
I can't bear to look.
But I know it will clot and stop,
I read it in this book!



*Platelets make sure you do
not lose a lot of blood.*



disc-shaped particles found in blood that help in forming a clot at the opening of a wound. In this way, platelets make sure that we do not lose too much blood when we cut ourselves.

There are other particles in blood, called white blood cells, whose job is to fight infection. They fight germs that creep inside our body through a cut or wound.

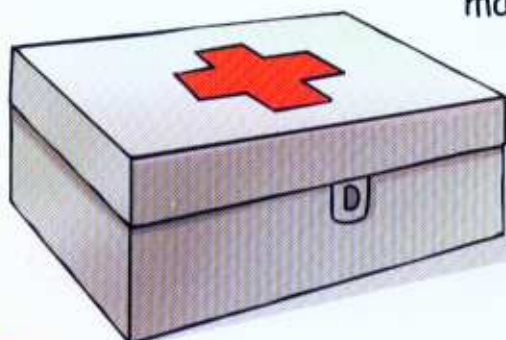
Over the next few days, a hard crust, or scab, will form over a deep wound. Avoid scratching or touching the scab. It protects the new skin that slowly starts growing under it. Once the new skin has finished growing, the scab will dry and fall off on its own.

FIRST AID



Treating an injury before you go see a doctor is called first aid. If it is just a scratch, all you need to do is wash the wound with clean water and apply a little antiseptic cream or lotion on it. But if a bruise shows up, then it needs to be treated with a special cream your parents will know of. A bruise should also be covered with a net-like cloth called gauze or with cotton wool. On top of it, a bandage needs to be tied. The bandage makes sure you do not scrape against the wound and open it up again. It also prevents the wound from coming in contact with germs.

If you are bleeding, ask an



Keep a first-aid box handy—in your parent's car, in your home, and in your classroom.

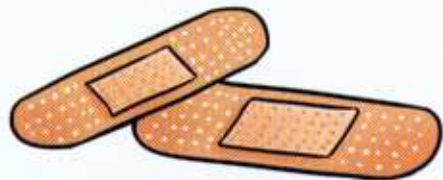
WOUND WISE

Till the time the wound starts drying, the bandage must be changed by an adult every day. Cleaning up, or 'dressing' the wound may hurt, but it helps you get better faster!



adult to make sure there are no bits of glass, stone chips, or anything sharp lying inside the wound. If there is, the person will need to take it out first or rush you to the doctor.

If it is a small cut, take a piece of clean cloth or cotton wool and press it down on the wound. The bleeding should stop soon. Then, ask your parents to help clean the wound with water and put some antiseptic on it. If there is no antiseptic cream or lotion around, use a disinfectant to clean the wound again. A disinfectant is a liquid that kills germs that can cause an infection.



A first-aid box must have a scissor, band-aid, a disinfectant like dettol, bandage, a skin ointment, and cotton.



SORE NO MORE

Cuts are of many types

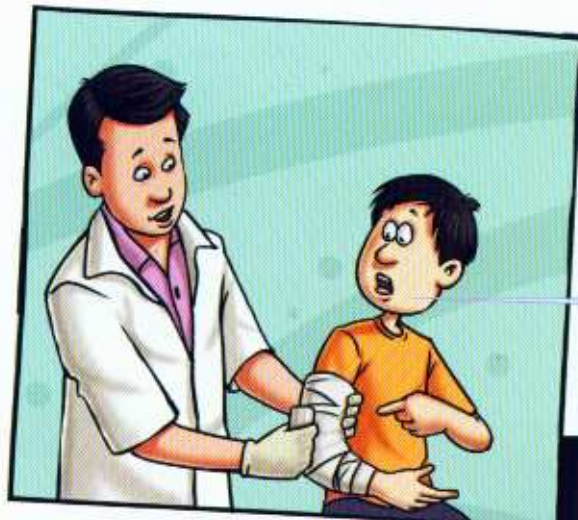
Some small or big, some deep and mean.

But I must be brave, and keep that cut

Free of germs, covered, and clean.



FRACTURE FACTS



Ouch! I don't see a scratch or cut. So why does it hurt, doctor?

You might have broken a bone.



Although your bones are tough and strong, sometimes even the strongest bone in your body can break. This happens when there is too much pressure on a bone or when you suffer a clumsy fall. A broken bone is called a fracture.

Sometimes, when a bone snaps, the broken pieces can move away from each other. For healing to begin, the pieces need to be brought back together. To know how badly a bone is broken, doctors look at a special kind of photograph, called an X-ray.

Before placing pieces of bones back together, the doctor will first give you a pain-killing injection. After the bones have been set together, a plaster, or a hard bandage, will be cast around the



SORE NO MORE

Today, while playing with my friends,
The ball hit my leg with a loud 'thwack'!
Now I need to go see the doctor to know
If the bone's in pieces or it's just a crack.



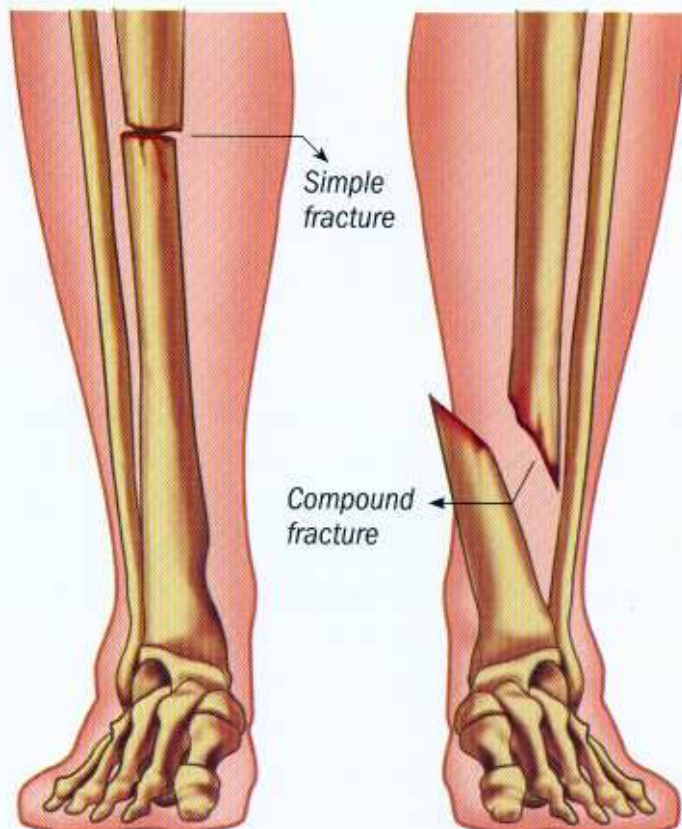
injured arm or leg. This will help keep the bones in place. The doctor will remove the cast after six to eight weeks, when the fracture has healed completely.

If you think you have broken a bone, try not to move the injured limb. It will only cause more pain. To lessen the pain, an adult may apply ice to the injured area as first aid, while you call for the doctor.

If the fall is really bad, a broken bone may stick out of your skin. Don't worry, the doctor will set it right.

WOUND WISE

Bone fractures are of two broad types. In a 'simple' fracture, the skin around the broken bone is intact. In a 'compound' fracture, the broken bone sticks out of the skin.





A STITCH IN TIME...



Wounds that are large and deep usually do not close properly without help. You will need a doctor to stitch together the edges of such an injury.

First, the doctor will give you a medicine called an anaesthetic. It makes sure that you do not feel any pain around the wound. The doctor uses a special needle to stitch a deep wound. Some of these needles are straight, while others are curved like the letter 'C'. The thread is either a special type of silk or nylon.

It usually takes at least a week for the wound to dry and the gap in your skin to close. Only then will the doctor take the stitches out.

Your body can also do its own repair work, for which it needs collagen. Collagen is found in the body and is made of fine threads, like strands of cotton. Its job is to connect pieces of broken skin together. Because collagen is a protein, the doctor

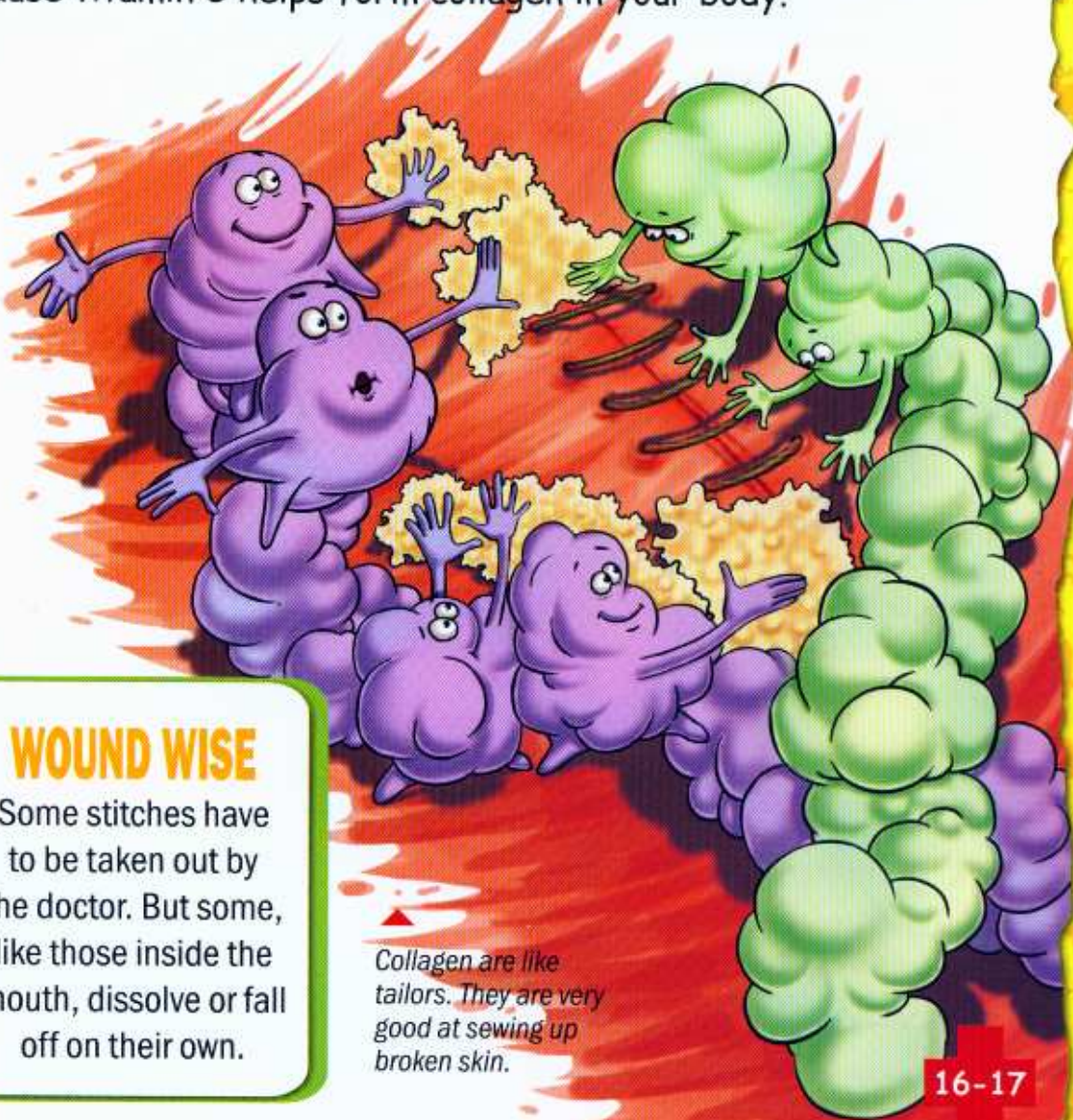


SORE NO MORE

The doctor uses thread and needles,
To help my bad wound heal.
My body makes more collagen
That forms a natural seal.



will often ask you to eat protein-rich food (fish, milk, curd, dal, and so on) while your injury heals. She might also tell you to take vitamin C tablets or drink a lot of orange juice. This is because vitamin C helps form collagen in your body.

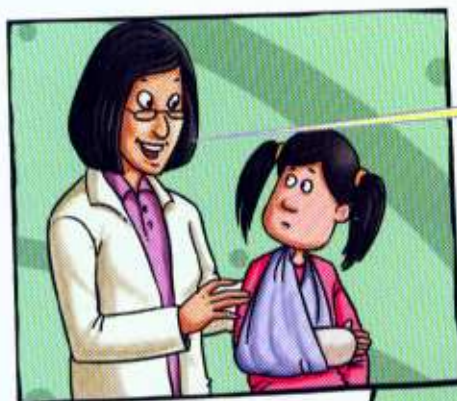


WOUND WISE

Some stitches have to be taken out by the doctor. But some, like those inside the mouth, dissolve or fall off on their own.

Collagen are like tailors. They are very good at sewing up broken skin.

SPRAIN PAIN!



This sling will help rest your arm.

I thought a sling is used to hurl stones!

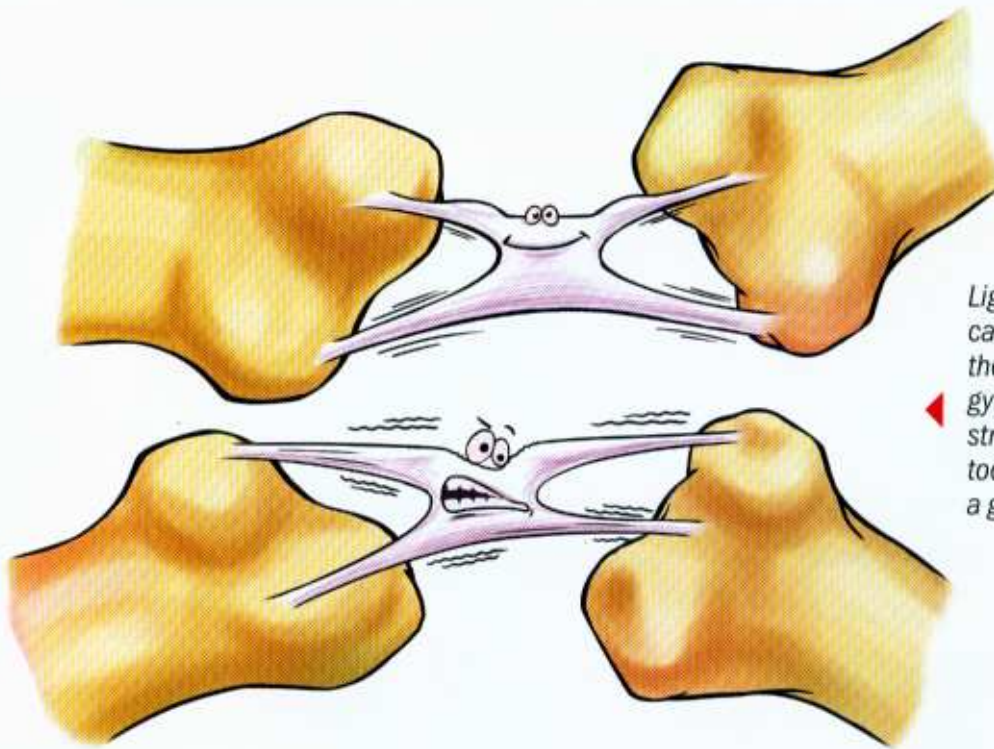


No hurling anything till this broken arm heals!

WOUND WISE

To rest a sprained arm, you can make a sling at home. Find a long scarf and loop it around the arm and behind your neck. Then, tie the two ends of the scarf together with a safety pin.

Sometimes, while running, you might end up twisting your ankle. The sharp pain you will feel is your tissues crying out. Our body contains different kinds of tissues. Some, like ligaments, are like rubber bands that hold bones in place. Ligaments can bend and stretch easily, but if you stretch them too far by twisting your ankle or trying to lift something very heavy, they can tear. Injury to a ligament is called a sprain.



Ligaments can stretch themselves like gymnasts do. But stretching them too much is not a good idea!

If a ligament is stretched a lot or slightly torn, it causes swelling and pain. But a ligament that is completely torn hurts a lot. In fact, the pain is so bad that you may even fear you have broken a bone!

Only a doctor can tell if you have broken a bone or torn a ligament. To do this, the colour, shape, and size of your injury will be checked. Usually, the doctor will ask you to get an X-ray done to make sure you have not broken a bone.

To cure a sprain, you must rest the injured area. Putting ice helps when you have a mild sprain.



◀ Ankles sprain easily.



SORE NO MORE

Sprains and strains,
Pain and tears,
Are all part of
My growing-up years.



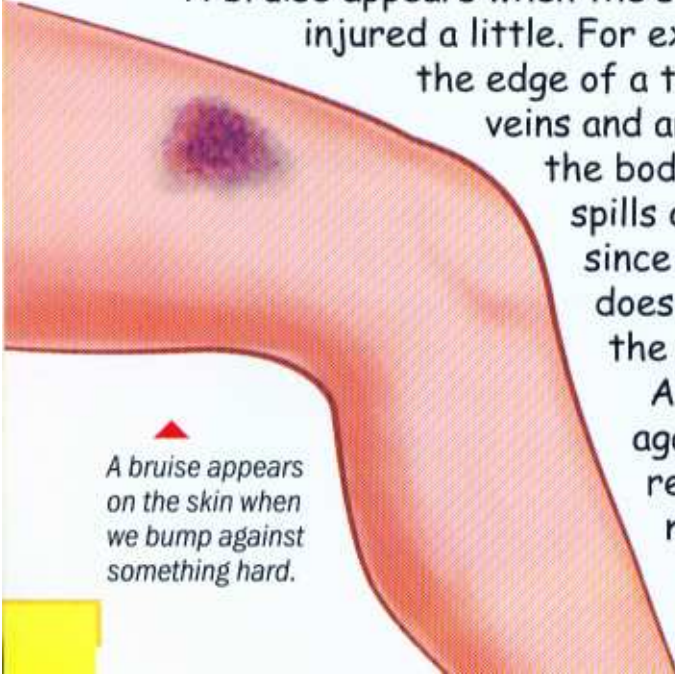
BLACK AND BLUE!



Not all injuries bleed. Sometimes after you have hurt yourself, you can end up with a bruise.

A bruise appears when the soft tissues under your skin are injured a little. For example, when you bump against the edge of a table, those tiny pipes called veins and arteries that carry blood inside the body might break. As a result, blood spills out of these tubes. However, since the skin is intact, the blood does not flow out but collects under the skin.

At first, the skin that banged against the table becomes angry red or purple. Sometimes, you might also see a tiny bump under the skin. Then, as the

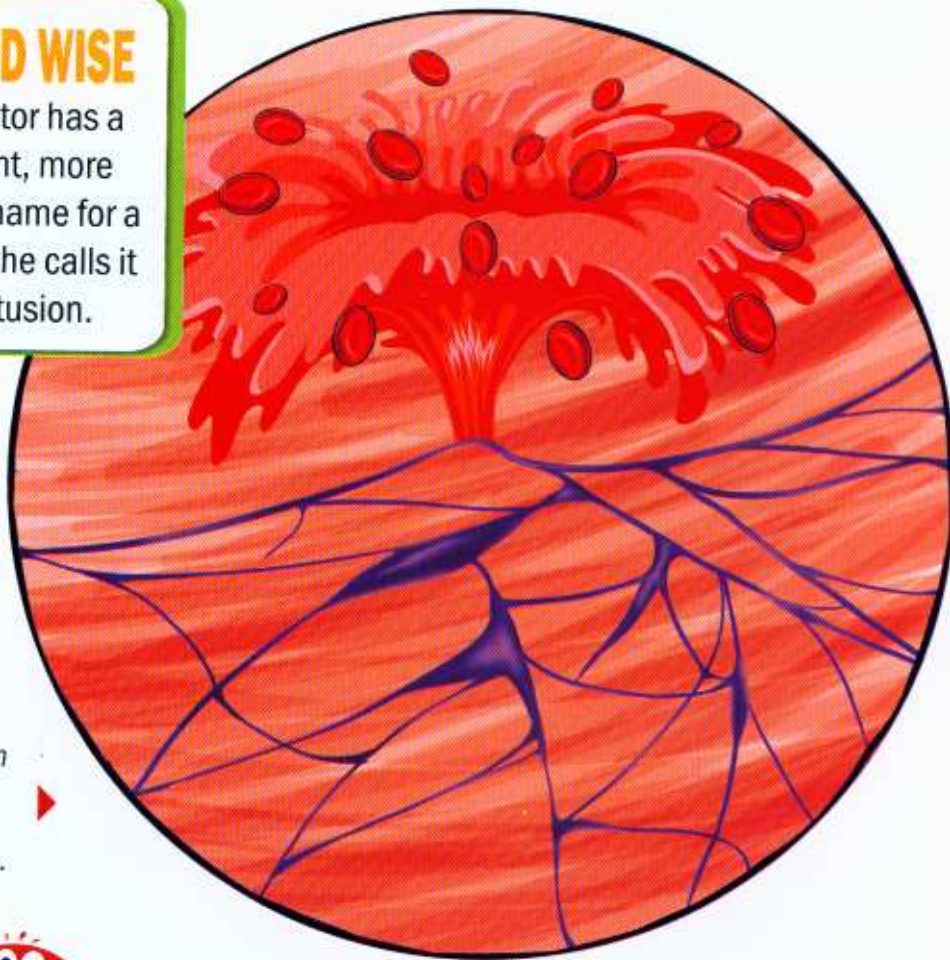


A bruise appears on the skin when we bump against something hard.

WOUND WISE

The doctor has a different, more difficult name for a bruise. She calls it a contusion.

Red blood cells, spilling out of broken veins and arteries, collect under your skin to form a bruise.



SORE NO MORE

The story of bruise explains
How Jerry gives Tom a black eye.
But sometimes I sit and wonder
Why can't they be friends and say 'Hi'?



body starts healing itself, the bruise turns darker. Finally, it becomes black. As the wound gets better, the bruise becomes lighter in colour. After about two weeks, the dark spot vanishes from your skin.

A bruise disappears faster if you place a cloth dipped in cold water on it or press some ice cubes, wrapped in a towel, against it.



STAY SAFE!



You will probably not find a single child in your school who has not had a scratch, bruise, cut, or fracture. But you can always take precautions.

For example, when you go out to play, wear thick sports socks and shoes instead of open sandals. Going cycling? Wear long trousers that cover and protect your legs. Long sleeves will keep your arms covered. Avoid sharp instruments like scissors, needles, and knives. Ask an adult to cut for you. While playing cops and robbers, make yourself cardboard weapons that will not cut you even if they touch your skin.

After reading all this, you will surely be more careful. But it is just as important to be ready in case someone gets hurt. Keep a first aid box at home and inside your classroom. Make sure it contains the following: bandages, dressings (gauze rolls), antiseptic soap (to wash small wounds), antiseptic lotion (to



clean wounds), cotton, scissors (to cut bandages), tweezers (to remove, say, a thin piece of wood, or splinter), thermometer, and medicines (like painkillers).

- If a wound is bleeding a little, a soft, clean cloth can be pressed against the cut.
- Wounds should be cleaned with warm water and a disinfectant or soft soap. Applying an antiseptic lotion or cream later on is a good idea.
- Bandages need to be changed every day. If they get wet or become dirty, it is time for a new one.
- While a wound is healing, do not scratch it even if it itches. You can end up with a scar.
- Some injuries, like cutting yourself against a rusty nail, mean you have to take an injection, called a tetanus shot.
- Most cuts, scratches, and abrasions heal on their own. But always inform your parents whenever you hurt yourself.



SORE NO MORE

It's better to be careful, than to be brash.
I'd rather play it safe, than end up in a crash!



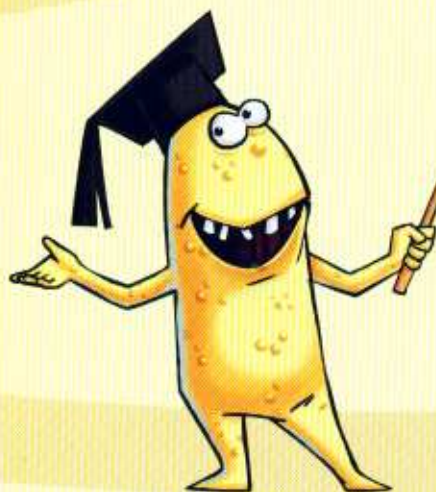
WORDS TO REMEMBER



- **Abrasion:** an injury that causes the skin to tear and peel off
- **Antiseptic:** a medicine (liquid or cream) that fights infection
- **Bruise:** an injury that causes blood to collect under the skin, when tissues under the skin are injured by a blow or bump. It is also known as contusion
- **Collagen:** a type of protein found in tissues, muscles, and ligaments
- **Ligament:** a strong, elastic tissue that holds bones in place
- **Muscle:** an elastic tissue found in humans and animals that helps in movement



This is a
GREEN
book



Injuries



Banging against furniture. Falling while playing. Cutting your finger on something sharp...some days can be painful! But did you know that pain is the body's way of telling you to be careful? Or that there are friends inside you who heal your wounds? Read this book to understand what is a bruise, sprain, or fracture. Find out about first aid. And by the time you finish the last page, you will learn how to protect yourself from injuries. What's more, the next time you hear yourself crying 'Ouch!' 'Aargh!' or 'Boo hoo!', you will know exactly what to do!

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